ABSTRACT OF THE DISCLOSURE

A biosensor for detecting an antigen using an antigen/antibody coupling includes: a silicon substrate, at least one interdigital electrode pair structure that is located on the silicon substrate, the electrode pair being interspaced at a maximum distance of 1.0 µm; a counter-electrode on the silicon substrate; a reference electrode; a first layer of protein, covering at least the interdigital electrode structure; a selective second protein layer applied to the first layer and containing a capture antibody selected specifically with respect to the antigen of interest and to which the antigen can be coupled. A sensor signal can be read on the interdigital electrode structure, if the antigen is coupled to the capture antibody by way of a sample to be analysed that comes into contact with the biosensor and a redox reactive molecule is enzymatically released on the sensor surface by an enzyme-marked detection antibody likewise coupled to the antigen.